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Researchers to Develop Engineering Standards for the Harness-Racing Industry

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(Editor's Note: Weather permitting, University of Dayton researchers will perform scientific testing of a sulky under simulated race conditions at the Montgomery County Fairgrounds on Wednesday, Nov. 3, at 9 a.m.)

RESEARCHERS TO DEVELOP ENGINEERING STANDARDS FOR THE HARNESS-RACING INDUSTRY

DAYTON, Ohio -- As manufacturers introduce lightweight, faster sulkies for harness racing, University of Dayton researchers are racing to develop engineering tests that will allow the industry to set strength and durability standards.

Once standards are implemented, the University of Dayton Research Institute's structural integrity laboratory will become a national site for testing of new sulky designs, according to Kent Hastings, liaison for the Columbus-based United States Trotting Association.

"At the present time, there are no testing standards for sulkies throughout the industry. We're developing industry-wide standards as a safety measure," Hastings said.

Fred Stoll and Tom Whitney, research engineers in the University of Dayton Research Institute, are rigging a sulky--a single-seated two-wheeled vehicle that's drawn by a horse--with "strain gauges" that measure the stretching or compressing of materials and accelerometers that measure shaking. A notebook PC that fits in a small suitcase under the sulky's seat will record this load data under simulated race conditions and later in qualifying races at Lebanon Raceway.

"We're looking at two aspects with our research," Stoll said. "First, we need to set standards for the dead load the sulky must carry without the metal bending. Secondly, we need to quantify what kinds of oscillating loads the sulky experiences because these can cause

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the metal to become brittle and break."

Based on the results from the scientific tests, UDRI will recommend strength and durability standards for the industry.

"This is analogous to the rigorous certification requirements for strength and durability in the aircraft industry," Stoll said.

As part of industry-wide standards that may go into effect as early as March 1994, the USTA is expected to require inspections every two years, scientific testing of all new sulky designs and a list of physical dimensions and configurations to which all sulkies must conform, according to Hastings.

The USTA includes 35,000 members, with harness racing a popular attraction at 381 county fairs and 46 racetracks throughout the country.

For UDRI's aerospace mechanics division, engineering a better sulky is a change of pace from its work for the Air Force and aerospace industry. These researchers have built a national reputation for developing windshields that protect pilots and aircraft from high-speed bird impact.

"We've been getting a lot of stares on campus as we drag this sulky to various labs," Stoll said with a laugh. "People say that it looks like we're pulling a rickshaw."

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